TEST RESULTS OF GRADATION FOR SDBC
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	**CP-RW-2017-12-23-04** **Date: 24-12-17**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.
Address	:	Kodigehalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.
Agency	:	Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.
Customer Reference	:	EE/BTP/BBMP/E-PMT/248/2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	23-12-17
Sample ID No	:	2017-12-23-04/01
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)
Date of test	:	23-12-17

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	502	501
2	Weight of the sample After extraction	B	478	477
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.78	4.79
4	Average percentage	%	4.8	

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore

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Lab ID : **CP-RW-2017-12-23-04** **Date: 24-12-17**

Sample ID No : **2017-12-23-04/01**

AFTER EXTRACTION(Trail-1)

Weight of Sample(gm) : 478

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	31	31	6.5	93.5	90-100
4.75	213	244	51.0	49.0	35-51
2.36	63	307	64.2	35.8	24-39
1.18	39	346	72.4	27.6	15-30
0.3	71	417	87.2	12.8	9-19
0.075	34	451	94.4	5.6	3-8
PAN	27	478	100.0	0.0	0

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm) : 477

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	29	29	6.1	93.9	90-100
4.75	215	244	51.2	48.8	35-51
2.36	62	306	64.2	35.8	24-39
1.18	41	347	72.7	27.3	15-30
0.3	66	413	86.6	13.4	9-19
0.075	32	445	93.3	6.7	3-8
PAN	32	477	100.0	0.0	0

Note:-

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Bangalore.

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2017-12-18-03** **Date: 21-12-17**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.
Address	:	Kodigehalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.
Agency	:	Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.
Customer Reference	:	EE/BTP/BBMP/E-PMT/248/2015-16
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	18-12-17
Sample ID No	:	2017-12-18-03/01
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)
Date of test	:	18-12-17

The results of the tests conducted on the Semi Dense Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-16
1	Marshal Stability at 60°C, KN	10.55	10.45	8.2KN(min)
2	Marshal flow at 60°C, mm	3.27	3.29	2-4
3	Percent air Voids	4.34	4.25	3-5
4	Percent Voids in mineral Aggregate(VMA %)	13.91	13.94	13-15
5	Percent Voids filled with Bitumen(VFB %)	70.32	71.12	65-75
6	Density, g/cc	2.25	2.24	–

Note:-

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2017-12-18-03** **Date: 21-12-17**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.
Address	:	Kodigehalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.
Agency	:	Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.
Customer Reference	:	EE/BTP/BBMP/E-PMT/248/2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	18-12-17
Sample ID No	:	2017-12-18-03/01
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)
Date of test	:	18-12-17

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	99.0	1.0	98.8	Minimum Retained Coating 95%
2	98.5	1.5		
3	99.0	1.0		

Note:
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TEST RESULTS OF GRADATION FOR SDBC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : **CP-RW-2017-12-18-03** **Date: 20-12-17**

Customer : Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.

Address : Kodigehalli Sub division, BBMP, Bangalore.

Project Name : Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.

Agency : Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.

Customer Reference : EE/BTP/BBMP/E-PMT/248/2015-16

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 18-12-17

Sample ID No : 2017-12-18-03/01

Type of Mix : SDBC-Plant (Semi Dense Bituminous Concrete)

Date of test : 18-12-17

Weight of Sample : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100	100
9.5	415	415	8.30	91.70	90-100
4.75	2182	2597	51.94	48.06	35-51
2.36	1040	3637	72.74	27.26	24-39
1.18	523	4160	83.20	16.80	15-30
0.3	500	4660	93.20	6.80	9-19
0.075	172	4832	96.64	3.36	3-8
PAN	168	5000	100.00	0.00	0

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CP/TF/01

TEST RESULTS OF STEEL

Lab ID	:	**CP-2017-11-02-05** **Date: 04-11-17**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.
Address	:	Kodigehalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.
Agency	:	Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.
Customer's Reference	:	EE/BTP/BBMP/E-PMT/248/2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	02-11-17
Sample ID No	:	2017-11-02-05/04
Sample Type	:	Bhuwalka
Reference to BIS codes	:	IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.
Date of test:	:	03-11-17

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	Bhuwalka	Fe500	8	0.392	542	672	20.0%	Satisfactory	Satisfactory
2	Bhuwalka	Fe500	10	0.615	568	685	20.0%	Satisfactory	Satisfactory

Note:

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR SEMI DENSE BITUMINOUS CONCRETE

Lab ID	:	**CP-RW-2017-12-18-03** **Date: 21-12-17**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.
Address	:	Kodigehalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.
Agency	:	Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.
Customer Reference	:	EE/BTP/BBMP/E-PMT/248/2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	18-12-17
Sample ID No	:	2017-12-18-03/01
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)
Date of test	:	18-12-17

Physical Requirements fo Coarse Aggregate for Semi Dense Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	11.2	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	10.6		
Strength	Aggregate Impact Value	226	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.66	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.28	Maximum 2%	IS:2386 Part III

Note:

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-12-11-03** **Date: 13-12-17**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.
Address	:	Kodigehalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.
Agency	:	Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.
Customer Reference	:	EE/BTP/BBMP/E-PMT/248/2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	11-12-17
Sample ID No	:	2017-12-11-03/01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	11-12-17

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	25.3%	

Note:-

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TEST RESULTS OF GRADATION FOR WMM

Lab ID : **CP-RW-2017-12-11-03** **Date: 13-12-17**

Customer : Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.

Address : Kodigehalli Sub division, BBMP, Bangalore.

Project Name : Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.

Agency : Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.

Customer Reference : EE/BTP/BBMP/E-PMT/248/2015-16

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 11-12-17

Sample ID No : 2017-12-11-03/01

Type of Mix : WMM (Wet Mix Macadam)

Date of test : 11-12-17

Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	315	315	2.9	97.1	95-100
22.4	2259	2574	23.4	76.6	60-80
11.2	2179	4753	43.2	56.8	40-60
4.75	2251	7004	63.7	36.3	25-40
2.36	1621	8625	78.4	21.6	15-30
0.6	623	9248	84.1	15.9	8-22
0.075	1338	10586	96.2	3.8	0-5

Note:-

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2017-12-11-03** **Date: 13-12-17**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.
Address	:	Kodigehalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.
Agency	:	Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.
Customer Reference	:	EE/BTP/BBMP/E-PMT/248/2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	11-12-17
Sample ID No	:	2017-12-11-03/01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	11-12-17

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.2	300.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.6	24.7
6	Aggregate impact value (Mean of two tests)	Pecentage	24.6	

Note:-

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CP/TF/01

TEST REPORT ON BITUMEN

Lab ID	:	**CP-2017-11-22-02** **Date: 24-11-17**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.
Address	:	Kodigehalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.
Agency	:	Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.
Customer's Reference	:	EE/BTP/BBMP/E-PMT/248/2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	22-11-17
Sample ID No	:	2017-11-22-02/01
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test	:	22-11-17

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**65**	60 to 70
2	Softening Point, °C	**50.2**	Min. 40°C
3	Ductility, cm	**98**	Min. 75cm
4	Flash point, °C	**245**	Min. 220°C
	Fire point, °C	**272**	

Note:

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Quality Manager

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CP/TF/01

TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-11-02-05** **Date: 06-11-17**

Customer : Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.

Address : Kodigehalli Sub division, BBMP, Bangalore.

Project Name : Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.

Agency : Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.

Customer's Reference : EE/BTP/BBMP/E-PMT/248/2015-16

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 02-11-17

Sample ID No : 2017-11-02-05/03

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 03-11-17

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	84	84	8.4	91.6	90-100	90-100	90-100	95-100
3	2.36 mm	145	229	22.9	77.1	60-95	75-100	85-100	95-100
4	1.18 mm	167	396	39.6	60.4	30-70	55-90	75-100	90-100
5	600 micron	187	583	58.3	41.7	15-34	35-59	60-79	80-100
6	300 micron	177	760	76.0	24.0	5-20	8-30	12-40	15-50
7	150 micron	148	908	90.8	9.2	0-10	0-10	0-10	0-15
8	Pan	92	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

Assistant Executive Engineer Kodigehalli Sub Division Yelahanka Zone, BBMP

CIVIL PRO Sig..... Date..... BANGALORE

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-11-02-05** **Date: 06-11-17**

Sample ID No : 2017-11-02-05/03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.65	–
2	Specific Gravity	2.58	–
3	Material finer than 75 micron(%)	4.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

Note:
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Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-11-02-05** **Date: 06-11-17**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.
Address	:	Kodigehalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.
Agency	:	Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.
Customer Reference	:	EE/BTP/BBMP/E-PMT/248/2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	02-11-17
Sample ID No	:	2017-11-02-05/02(b)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	03-11-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	245	245	4.9	95.1	90-100
3	10 mm	2635	2880	57.6	42.4	25-55
4	4.75 mm	1780	4660	93.2	6.8	0-10
5	Pan	340	5000	100	0	–

Assistant Executive Engineer, Kodigehalli Sub division, Yelahanka Zone, Bangalore

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-11-02-05** **Date: 06-11-17**

Sample ID No : 2017-11-02-05/02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.5	
3	Specific Gravity	2.67	–
4	Bulk Density(Loose) (Kg/l)	1.52	–
5	Bulk Density(Compacted) (Kg/l)	1.56	–
6	Water Absorption(%)	0.21	–
7	Aggregate crushing Value(%)	24.1	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	23.7	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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Assistant Engineer
Kodigehalli Sub-Division
Yelahanka Zone, BBMP
Bangalore.

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-11-02-05** **Date: 06-11-17**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.
Address	:	Kodigehalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.
Agency	:	Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.
Customer's Reference	:	EE/BTP/BBMP/E-PMT/248/2015-16
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	02-11-17
Sample ID No	:	2017-11-02-05/02(a)
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	03-11-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	256	256	1.7	98.3	90-100
3	20 mm	5533	5789	38.6	61.4	30-70
4	10 mm	4665	10454	69.7	30.3	10-35
5	4.75 mm	4233	14687	97.9	2.1	0-5
6	Pan	313	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-11-02-05** **Date: 06-11-17**

Sample ID No : 2017-11-02-05/02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	13.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.8	
3	Specific Gravity	2.68	–
4	Bulk Density(Loose) (Kg/l)	1.54	–
5	Bulk Density(Compacted) (Kg/l)	1.58	–
6	Water Absorption(%)	0.21	–

Note:

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Assistant Executive Engineer,
Bidgehalli Sub Division,
Dalhanka Zone, B.B.M.P.,
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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-11-02-05** **Date: 04-11-17**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.
Address	:	Kodigehalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.
Agency	:	Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.
Customer's Reference	:	EE/BTP/BBMP/E-PMT/248/2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	02-11-17
Sample ID No	:	2017-11-02-05/01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	03-11-17

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.65	–
2	Finess by Air permeablity method (m^2/kg, Min)	286.4	225m^2/kg, Min
3	Density (gm/cc)	3.14	–
4	Standard Consistency (%)	28.5%	Not specified
5	Initial Setting time	185 minutes	Not less than 30 minutes
6	Final Setting time	280 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	2mm	Not more than 10 mm

Note:

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Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore.

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-11-02-05** **Date: 01-12-17**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub division, BBMP, Bangalore.
Address	:	Kodigehalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Amco and De-enclave Layout surroundings in Ward no.08, Kodigehalli Sub division.
Agency	:	Sri. Vinod Kumar, Contractor, #10, Thindlu Main road, Vidyaranyapura, Bangalore.
Customer's Reference	:	EE/BTP/BBMP/E-PMT/248/2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	02-11-17
Sample ID No	:	2017-11-02-05/01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	03-11-17

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	54.5N/mm^2	Not less than 53 N/mm^2

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